Fig. 1

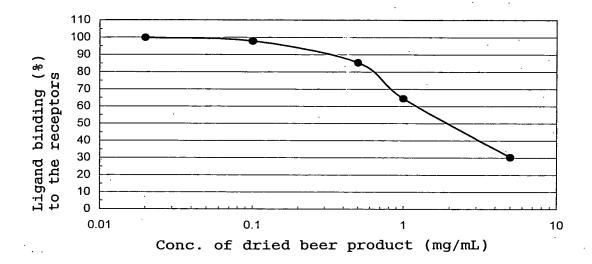


Fig. 2

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The numbers in parentheses are amount/yield
Beer (10L)
      freeze-drying
Freeze-dried beer (350g)
      Chromatography using synthetic adsorbent
          (adsorbent: XAD-2)
Adsorbed components (methanol elute)(10.9g)
      Weakly acidic cation exchange chromatography
          (resin: CM Sephadex C-25)
Adsorbed components (methanol/HCl elute)(2.19g)
      Gel Filtration Chromatpgraphy
          (resin: Sephadex G-15)
Active fraction No.1: Kd=3 to 5 (55.5mg)
Active fraction No.2: Kd=7 to 9 (33.1mg)
      Preparative ODS-HPLC
• Active fraction 1: Active substance \alpha (4.2mg)
• Active fraction 2: Active substance \beta (12.6mg)
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Fig. 3

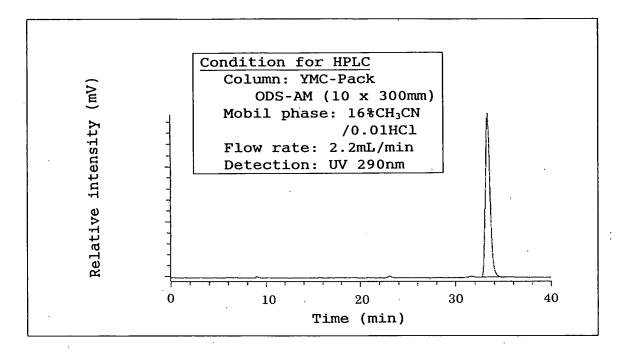
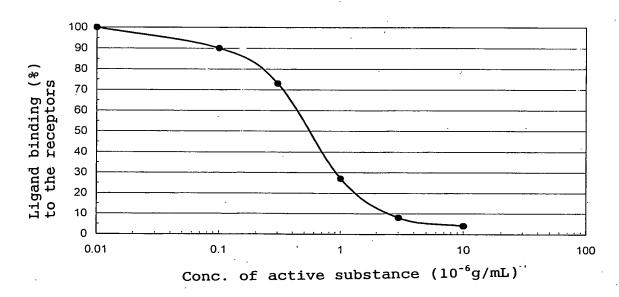


Fig. 4





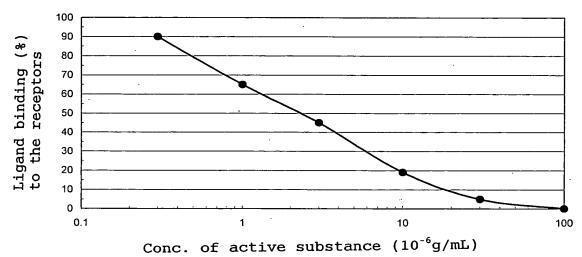


Fig. 6

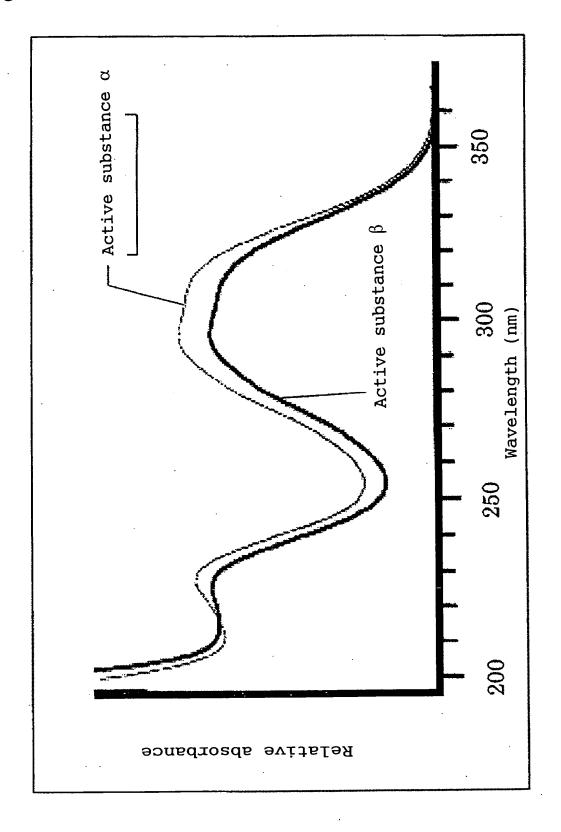
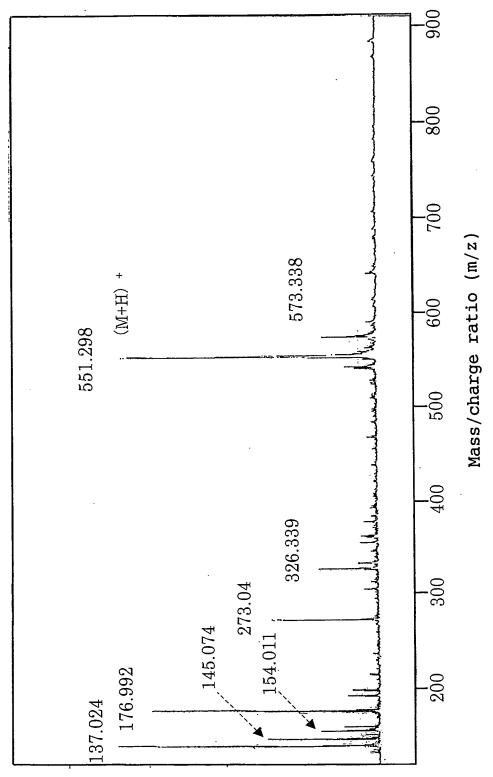


Fig. 7



Relative ion intensity

Fig. 8

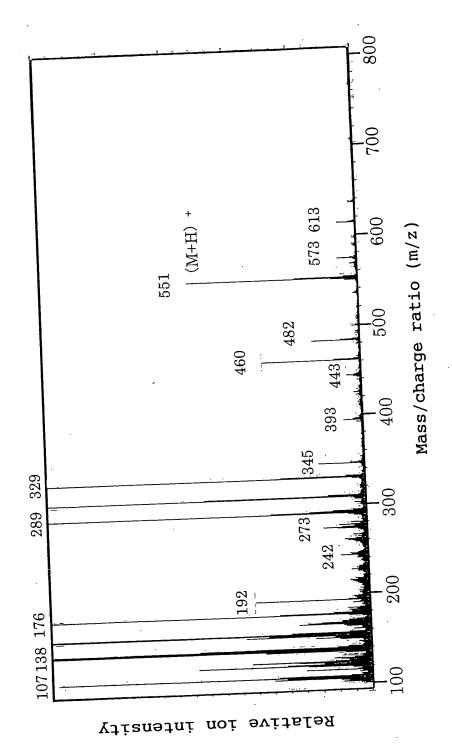


Fig. 9

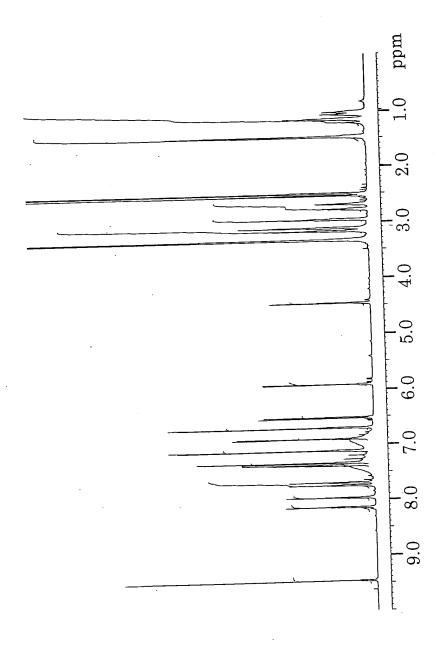
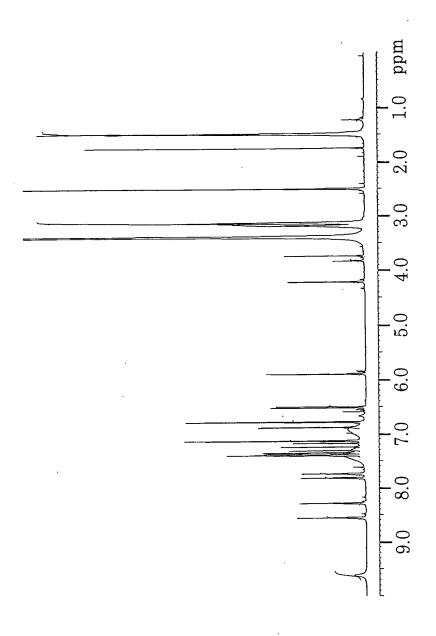


Fig. 10



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Fig. 11

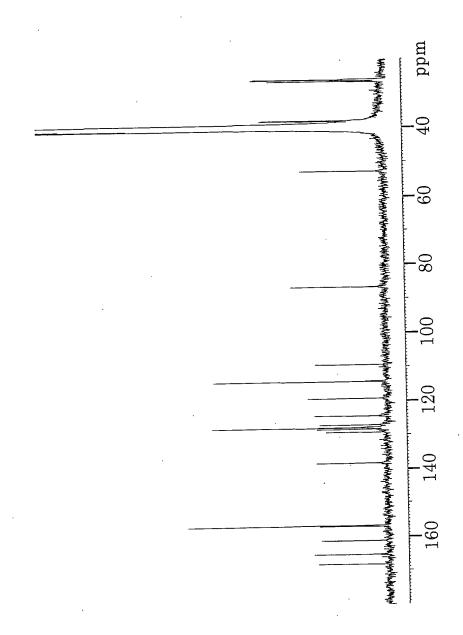


Fig. 12

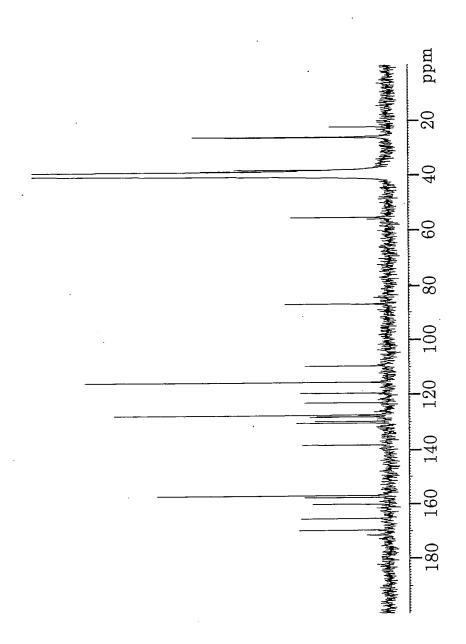
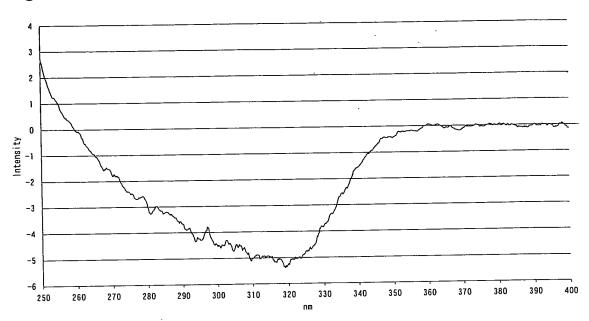


Fig. 13 '



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Fig. 14

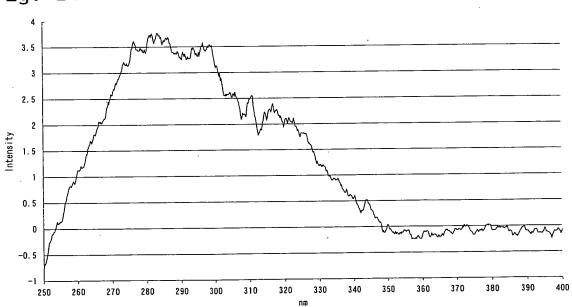


Fig. 15

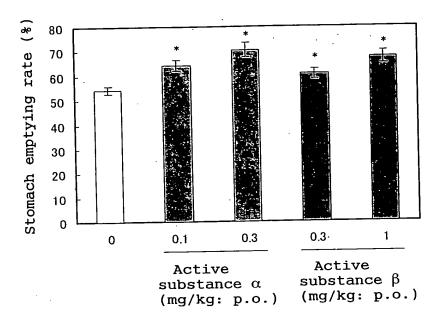


Fig. 16

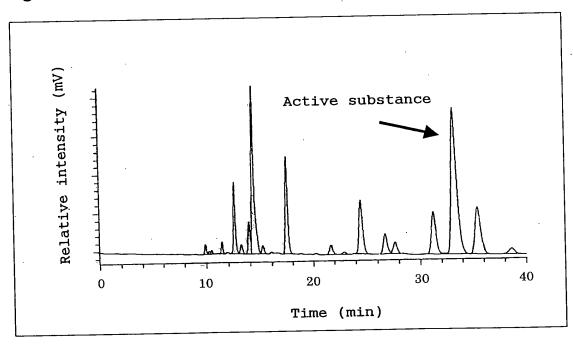


Fig. 17

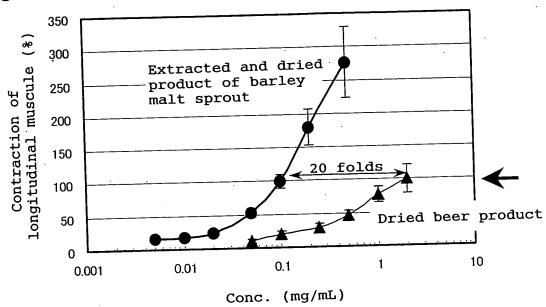


Fig. 18

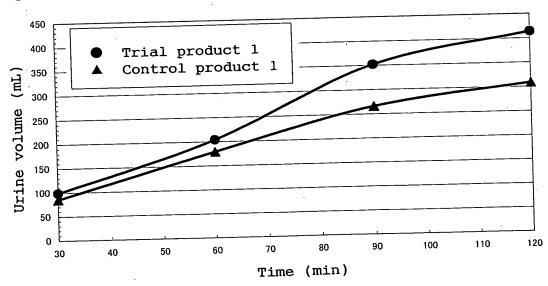


Fig. 19

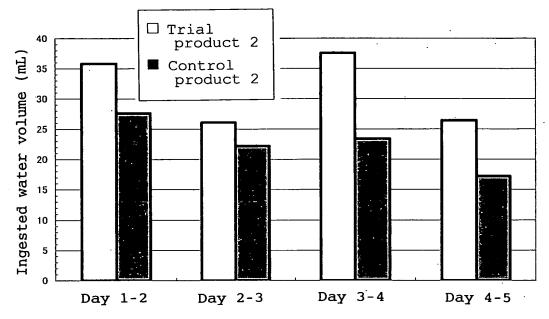


Fig. 20

